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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/648,029	08/26/2003	Kenneth J. Kledzik	2087.303C	2417

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EXAMINER

HA, NATHAN W

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 02/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary

Application No.

10/648,029

Applicant(s)

KLEDZIK ET AL.

Examiner

Nathan W. Ha

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Drawings

a. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “ball grid array” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Double Patenting

1. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

2. Claims 1-34 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-34 of prior U.S. Patent No. 6,713,854. This is a double patenting rejection.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-2, 12-14, 16-25, and 27-34 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishii (US 5,744,862).

In regard to claims 1, 13, and 24, in fig. 4, Ishii discloses an electronic circuit module comprising:

at least one IC package unit, each unit having

a carrier, or substrate, 11 having first and second IC package 17 (col. 4, line 47) mounting locations on opposed sides thereof, said first mounting location having a first mounting pad array, or lands, 13, said second mounting location having a second mounting pad array, said first and second mounting arrays being coupled to a carrier interface on the substrate 11; and

a pair of IC packages, each package having a package body containing an integrated circuit chip and a plurality of connection elements coupled to said chip and extending at least to the surface of said body, the connection elements of said first package being conductively bonded to said first mounting pad array, the connection elements of said second package being conductively bonded to said second mounting pad array (figs. 4 and 7); and

a printed circuit board, or motherboard, 20 having at least one interconnection pad array affixed thereto, each interconnection pad array coupled to circuitry on the printed circuit board and conductively bonded to the interface of a single IC package unit.

In regard to claims 2, 14, 19, 25, 30 wherein individual mounting pads of said first mounting pad array are coupled to individual mounting pads of said second mounting pad array by means of conductive links within the carrier, and the leads of one of said IC packages are conductively bonded directly to said interconnection pad array (figs. 4 and 7).

In regard to claim 12, Ishii further discloses the IC package is ball grid array type, for example, using solder balls 16a and 16a for electrical connection (fig. 4).

In regard to claims 16, 18, 27, 29, wherein said main circuit board includes a recess for each package unit affixed thereto, said recess receiving at least a portion of the body of one of said packages (fig. 2).

In regard to claims 17, 28, wherein the carrier comprises a semi-rigid laminar substrate, a thin substrate (fig. 4).

In regard to claims 20 and 31, wherein the carrier leads are gullwing shaped (fig. 4).

In regard to claims 21 and 32, wherein said carrier leads are L-shaped, each lead being butt-soldered to a pad of the interconnection pad array (figs. 4 and 11).

In regard to claims 22 and 33, wherein each of said opposing major faces incorporates a recess for receiving a single IC package (fig. 11).

In regard to claims 23 and 34, wherein one of said major faces is planar, while the opposing major face incorporates a recess, one IC package of each package pair being mounted on said planar major face and the recess receiving at least a portion of the body of the other IC package of that pair (fig. 4).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-11, 15, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishii as applied to claims 1-2, 12-14, 16-25, and 27-34 above, and further in view of Shim et al. (US 6,683,377, hereinafter, Shim.)

In regard to claims 3, 15, and 26, Ishii discloses all of the claimed limitations as mentioned above except the carrier comprises a flexible polymeric film. It should be noted that polymeric material is widely used in the art of semiconductor package to protect metal interconnections from exposing to the outside to prevent oxidation or electrical short circuit.

For instance, Shim discloses a package that includes polymeric film 10 as an insulating film to protect core layer 11, for example (see also, col. 2, lines 40-44 and figs. 1B-4).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to include an insulating layer, specifically, polymeric layer, in order to protect metal connection devices.

In regard to claims 4, 6, see the discussion regarding to claim 16.

In regard to claim 5, see the discussion regarding to claim 17.

In regard to claim 7, see the discussion regarding to claim 2.

In regard to claim 8, see the discussion regarding to claim 21.

In regard to claim 9, see the discussion regarding to claim 20.

In regard to claim 10, see the discussion regarding to claim 22.

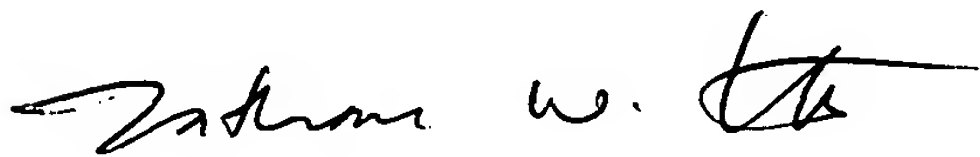
In regard to claim 11, see the discussion regarding to claim 23.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan W. Ha whose telephone number is (571) 272-1707. The examiner can normally be reached on M-TH 8:00-7:00(EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on (571) 272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Nathan Ha

1/25/05